

ARCH. BUILDING CONSTRUCTION

UMESH YADAV SIR

QP Code : 27488

(2 Hours)

(Total Marks : 50)

- N.B. : (1) **Q.1 is compulsory.** Attempt any two questions from Q.2 to Q.5
 (2) Figures to the right indicate full marks.
 (3) Assume suitable additional data, if necessary and state clearly the same.
 (4) Questions on RCC can be solved either by 'Limit State Method' or by Working Stree Method.'
 (5) Use of non-programmable, scientific calculator is permitted.

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| 1. | Write short notes on (any five) | 20 |
| | <ul style="list-style-type: none"> a) Curing of concrete b) precast concrete c) Compaction of concrete d) Form work for slab, beam and column e) W/C ratio and Workability of concrete f) grid floor g) Flat slab | |
| 2. | (a) Explain one- way and two- way slab. | 3 |
| | (b) Design a one way simply supported slab for the following requirements:
Span = 3.5 m
Live load = 3 KN/sq.m
Floor finish = 1.0 KN/sq.m
The slab rests on 230mm thick walls. Use M40 grade concrete and Fe415 grade steel. Draw a neat sketch showing the details of reinforcement. | 12 |
| 3. | (a) Explain singly and doubly reinforced sections | 3 |
| | (b) An RCC beam, 300 x 600 mm overall in section, overall, is reinforced with 8 bars of 20mm dia. In tension zone, with an effective cover of 25mm. Calculate moment of resistance of beam. Consider the beam made of M30 concrete & Fe415 steel. | 12 |
| 4. | Design a footing for a column 300x 600 mm to carry an axial load of 1200 KN. Assume safe bearing capacity of soil to be 300 KN/M ² . Use M30 grade concrete and Fe415 grade steel. Draw a neat sketch of the footing designed with the reinforcement details. DO NOT DESIGN FOR ONE WAY AND TWO WAY SHEAR. | 15 |
| 5. | Design a short column to carry an axial load of 2000 KN. Draw a neat sketch to indicate the steel reinforcements. Use M40 concrete and Fe 415 steel. | 15 |

SEM VI OCT 2015

15/10/2015

HUMANITIES

Q.P. Code : **27482**

(2 Hours)

[Total Marks : 50

N.B.: Part I and Part II are compulsory.

1. Answer any four out of the given 6 questions (each question carries 5 marks) 20
- List the factors influencing migration to urban centers.
 - List ideal characteristics of public open spaces.
 - Define the terms :
(i) Rururban (ii) Suburban (iii) Rural
 - With respect to Indian cities, explain growth around primary, secondary and tertiary sectors.
 - List examples of satellite / dormitory towns stating the primary city to which they belong.
 - Give examples of built and natural heritage (two each)
2. Attempt any three out of 4 questions (each question carries 10 marks) 30
- Define what you understand by urban culture elaborating with an example.
 - What is the impact of urbanization on gender issues?
 - How does lack of planning affect urban cities?
 - In your opinion, how does globalization impact urban life.
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SEM VI OCT 2015

16/10/2015

BUILDING SERVICES

QP Code : **27486**

(2 Hours)

[Total Marks : 50

- N. B. :** (1) Question No. 1 is **compulsory**.
(2) Solve any **three** questions from remaining **five** questions.
(3) Draw neat sketches wherever necessary.

1. Write short notes on any **four** :- 20
 - (a) Electrical distribution in high rise buildings
 - (b) Smoke detectors
 - (c) Escalators
 - (d) Fire hydrants
 - (e) Service floor
 - (f) Use of pressure reducing valves
 - (g) Classification of lifts as per their function

 2. Explain with neat sketches planning of 'Fire escape staircase' and fire escape chute. 10

 3. Describe the functioning of sprinklers and draw a schematic plan showing sprinkler system for basement car park. 10

 4. Explain any one system of water supply for high rise buildings. 10

 5. Draw neat sketches for any **two** :- 10
 - (a) Static tank
 - (b) Section of a lift along with machine room and lift pit.
 - (c) Wet riser cum down comer.

 6. Explain design of building for fire safety as per national building code. 10
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SEM - VI OCT 2015
THEORY OF STRUCTURES

19/10/2015

QP Code : 27479

(3 Hours)

(Total Marks : 50)

- Notes: (1) Question No. 1 is **compulsory**.
(2) Attempt any three questions from the remaining questions.
(3) Assume and state suitable data wherever required.

- 1) Design a suitable R.C.C. flat slab floor for a ground and six storey having floor height as 4.5M. The building has a column grid of 7.0M x 7.0M.
 - (a) Draw plan of a typical bay to 1:50 scale showing reinforcement details. (10 marks)
 - (b) Draw a typical section through column strip and middle strip. Scale 1:50 (10 marks)
 - 2) Explain through proportionate sketches hollow floors. (10 marks)
 - 3) Explain the various factors you will consider to select different types of slabs. (10 marks)
 - 4) Explain advantages and disadvantages of precast construction. (10 marks)
 - 5) What do you understand by ribbed floor? Show constructional details of ribbed floor. (10 marks)
 - 6) Explain the measures taken to resist the failure by punching shear for long span slabs. (10 marks)
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